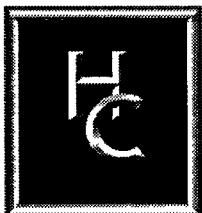
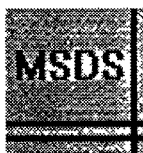


SDMS Doc ID 166243



MATERIAL SAFETY DATA SHEET



AMMONIUM PERCHLORATE

HUMMEL CROTON INC.

10 HARMICH ROAD

BUSINESS HRS.: 908-754-1800

SOUTH PLAINFIELD, NJ 07080

EMERGENCY PHONE NUMBERS

BUSINESS HRS.: 908-754-1800

CHEMTREC: 800-424-9300

I. PRODUCT IDENTIFICATION:

PRODUCT NAME.....: Ammonium Perchlorate

CHEMICAL FAMILY.....: Perchloric Acid Salt

CHEMICAL NAME.....: Ammonium Perchlorate

SYNONYMS.....:
Ammonia salt of Perchloric Acid

CAS NUMBER.....: CAS #: 7790-98-9

FORMULA.....: ClH4NO4

II. HAZARDOUS INGREDIENTS:

INGREDIENT NAME

Ammonium Perchlorate

CAS #: 7790-98-9

EXPOSURE LIMITS

OSHA:

ACGIH:

CONCENTRATION (%)

Essentially 100 %

III. PHYSICAL PROPERTIES:

PHYSICAL FORM.....: Solid Crystals

COLOR.....: White

ODOR.....: Odorless

MOLECULAR WEIGHT.....: 228.20

pH: Neutral

BOILING POINT.....: Not Applicable

MELTING/FREEZING POINT.....:

VISCOSITY.....: Not Applicable

SOLUBILITY IN WATER: Freely Soluble

SPECIFIC GRAVITY: 1.98

BULK DENSITY.....: Not Established

VAPOR PRESSURE: Not Applicable

VAPOR DENSITY: Not Applicable
(Air = 1)

IV. FIRE AND EXPLOSION DATA:

FLASH POINT.....:
Not Applicable.

AUTO-IGNITION TEMPERATURE.....:
Not Established

EXTINGUISHING MEDIA.....:
Water Spray

SPECIAL FIRE FIGHTING PROCEDURES: Wear
self-contained breathing apparatus and
protective clothing to prevent contact
with skin and eyes. Use water spray to
cool fire-exposed containers.

Strong oxidizer.

UNUSUAL FIRE / EXPLOSION HAZARDS: May explode
when heated. Contact with other material may
cause fire. Emits toxic fumes under fire
conditions.

V. HUMAN HEALTH DATA:

ROUTE(S) OF ENTRY.....: Eye Contact; Skin
Contact; Inhalation; Ingestion

HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE:

ACUTE INHALATION.....: Inhalation
may irritate the respiratory tract. Symptoms
may include coughing, shortness of breath,
sore throat and runny nose. If sufficient
amounts are inhaled and absorbed, symptoms
may resemble those in acute ingestion.

ACUTE SKIN CONTACT.....:
Skin contact may cause irritation with
symptoms of redness, swelling, itching
and pain.

ACUTE EYE CONTACT.....:
Eye contact may cause irritation
with symptoms of redness, swelling, itching,
tearing and pain.

ACUTE INGESTION.....:
Ingestion may cause gastroenteritis
(inflammation of the lining membrane of the
stomach and intestines) with abdominal pain,
nausea, vomiting and diarrhea. Systemic
effects may follow and may include ringing of
the ears, dizziness, elevated blood pre
vision and tremors.

CHRONIC EFFECTS OF EXPOSURE...:

CARCINOGENICITY.....:

This product is not listed by
NTP, IARC or regulated as a
carcinogen by OSHA.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE...:

Persons with preexisting eye or skin
conditions or impaired pulmonary
function may be more susceptible to the
effects of this product.

VI. EMERGENCY AND FIRST AID PROCEDURES:

FIRST AID FOR EYES.....: In case of contact,
immediately flush eyes with plenty of water
for at least 15 minutes. Call a physician.

FIRST AID FOR SKIN.....: In case of contact,
flush skin with water. Wash clothing before
reuse. Call a physician if irritation occurs.

FIRST AID FOR INHALATION: If inhaled, remove

to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

FIRST AID FOR INGESTION.: If swallowed, call a physician immediately.

VII. EMPLOYEE PROTECTION RECOMMENDATIONS:

EYE PROTECTION REQUIREMENTS.....:

Safety glasses or goggles.

SKIN PROTECTION REQUIREMENTS.....:

PVC gloves with impervious boots, apron or coveralls. Employees should wash their hands and face before eating, drinking or using tobacco products.

RESPIRATOR REQUIREMENTS.....:

Work ambient concentrations should be monitored and if the recommended exposure limit is exceeded, a NIOSH/MSHA approved dust respirator must be worn.

VENTILATION REQUIREMENTS.....:

Use local ventilation if dusting is a problem,
to maintain air levels below the recommended
exposure limit.

ADDITIONAL PROTECTIVE MEASURES.....:

Emergency showers and eye wash stations should
be available. Educate and train employees
in the safe use and handling of hazardous
chemicals.

VIII. REACTIVITY DATA:

STABILITY.....: Stable under
ordinary conditions of use and storage.

HAZARDOUS POLYMERIZATION...: Will not occur.

INCOMPATIBILITIES.....: Strong reducing
agents, Strong acids, Excessive heat

INSTABILITY CONDITIONS.....:

Excessive temperatures

(see INCOMPATIBILITIES).

DECOMPOSITION PRODUCTS.....: Ammonia

IX. SPILL AND LEAK PROCEDURES:

SPILL OR LEAK PROCEDURES.....: Utilize
recommended protective clothing and
equipment. Clean spills in a manner
that does not disperse dust into the air.
Spill area can be washed with water.
Collect wash water for approved disposal.
Keep from entering water or ground water.

WASTE DISPOSAL METHOD.....: Waste disposal
should be in accordance with existing federal,
state and local environmental regulations.

X. SPECIAL PRECAUTIONS & STORAGE DATA:

STORAGE TEMPERATURE (MIN/MAX): Ambient/Ambient.

SHELF LIFE.....: Unlimited
in tightly closed container.

SPECIAL SENSITIVITY.....: None

HANDLING/STORAGE PRECAUTIONS: Avoid breathing
dust. Avoid getting in eyes or on skin. Wash
thoroughly after handling. Store in a dry
place away from direct sunlight, heat and
incompatible materials (see Section VIII).
Reseal containers immediately after use.
Store away from food and beverages.

XI. SHIPPING INFORMATION:

Contact Hummel Croton for current
shipping Information

XII. TOXICITY DATA:

ACUTE EFFECTS: Harmful If Swallowed. May Be
Harmful If Inhaled. May Be Harmful If Absorbed
Through The Skin. Causes Eye And Skin
Irritation. Material Is Irritating To Mucous
Membranes And Upper
Respiratory Tract.

RTECS #: SC7520000 Perchloric Acid,
Ammonium Salt

TOXICITY DATA

ORL-RAT LD50:4200 MG/KG	GISAAA 28(8),8,63
ORL-MUS LD50:1900 MG/KG	GISAAA 28(8),8,63
ORL-RBT LD50:1900 MG/KG	GISAAA 28(8),8,63

ORL-GPG LD50:3310 MG/KG GISAAA 28(8),8,63

TARGET ORGAN DATA

Behavioral (Convulsions Or Effect
On Seizure Threshold)

Behavioral (Excitement)

Behavioral (Ataxia)

Behavioral (Coma)

Lungs, Thorax Or Respiration (Dyspnae)

Only Selected Registry Of Toxic Effects Of
Chemical Substances

(RTECS) data is presented here. see actual
entry in RTECS for complete information.

XIII. REGULATORY INFORMATION:

OSHA STATUS.....: This product
is hazardous under the criteria of the Federal
OSHA Hazard Communication Standard
29 CFR 1910.1200.

TSCA STATUS.....:
On TSCA Inventory

CALIFORNIA PROPOSITION 65.....:To the best
of our knowledge, this product contains no
levels of listed substances, which the state
of California has found to cause cancer, birth
defects or other reproductive effects.

RCRA STATUS.....:
If discarded in its purchased form, this
product would not be hazardous waste either by
listing or by characteristic. However, under
RCRA, it is the responsibility of the product
user to determine at the time of disposal,
whether a material containing the product or
derived from the product should be classified
as a hazardous waste. (40 CFR 261.20-24)

EUROPEAN INFORMATION

Ec Index No: 017-009-00-0

Explosive Harmful

R 5 Heating May Cause An Explosion.

R 8 Contact With Combustible Material May
Cause Fire.

R 22 Harmful If Swallowed.

R 36/37/38 Irritating To Eyes, Respiratory
System And Skin.

S 12 Keep Away From Heat

S 26 In Case Of Contact With Eyes, Rinse
Immediately With

Plenty Of Water And Seek Medical Advice.

S 27 Take Off Immediately All Contaminated
Clothing.

S 36/37/39 Wear Suitable Protective Clothing,
Gloves And Eye/Face Protection.

REVIEWS, STANDARDS, AND REGULATIONS

OEL=MAK

NOHS 1974: HZD 80353; NIS 2; TNF 101;
NOS 3; TNE 1062

NOES 1983: HZD 80353; NIS 1; TNF 7; NOS 1;
TNE 1445; TFE 230

XIV. ECOLOGICAL INFORMATION

Data Not Yet Available.

XV. APPROVALS:

REASON FOR ISSUE.....:

Update onto new format.

PREPARED BY.....: Mark Dugan

APPROVED BY.....: Mark Dugan


APPROVAL DATE.....: 5/2/96


■ WARRANTY

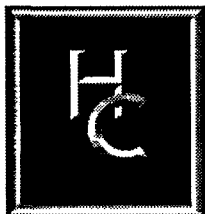


USE "BROWSER" OR SECONDARY MOUSE
KEY TO RETURN TO PREVIOUS ENTRY PANEL !

RETURN TO BEGINNING OF WEB PAGE

: hum chem@aol.com

: hummel@earthlink.net



AMMONIUM PERCHLORATE

F.W. 117.49 NH_4ClO_4

CAS # 7790-98-9

SPECIFICATIONS:
(TYPICAL)

PRODUCT CODE:	01-1355
PURITY:	99.7%
AMMONIUM CHLORIDE:	0.004%
AMMONIUM CHLORATE:	0.004%
MOISTURE:	0.015%
ASH:	0.03%
WATER INSOLUBLES:	0.002%
SCREEN ANALYSIS:	-20 +200 MESH

OTHER SPECIFICATIONS: MIL-A-192B;
MIL-A-23948 (wep) ;MIL-A-82667/2 (os) ;
AS-5040; AS-4596; MIL-A-23442A

PACKAGING: 250 LB. NET WEIGHT METAL DRUMS

USES:

AMMONIUM PERCHLORATE IS PRIMARILY USED IN
EXPLOSIVE AND PYROTECHNIC MIXTURES AND AS
AN INGREDIENT IN JET AND ROCKET FUEL.

HANDLING:

SERIOUS FIRE HAZARD BY REACTION WITH ORGANIC
MATERIALS SUCH AS: FUELS, REDUCING AGENTS,
ETC. POWERFUL OXIDIZER. WHEN HEATED IT
EMITS HIGHLY TOXIC FUMES OF CHLORIDES. USE
WATER OR FOAM TO FIGHT FIRE.

PRODUCT INFORMATION:

CAS REGISTRY NUMBER: 7790-98-9

NIOSH: RTECS# SC 7520000

PROPER SHIPPING NAME: AMMONIUM PERCHLORATE



DOT CLASS: 5.1

DOT LABEL: OXIDIZER

IMCO#: 5.1,1442

UN# 1442

SAX 5,369; 6,266

HAZ: 9

EMERGENCY RESPONSE GUIDE #: 143

NPFA: NONFIRE: H0,F0,R4; FIRE: H2,F0,R4,

OXIDIZER

OFFP: USE WATER



HAZARD INFO !



ACTIVATE ME ! OR....

AVAILABLE TO CUSTOMERS
UPON REQUEST !

■ WARRANTY

USE "BROWSER" OR SECONDARY MOUSE KEY
TO RETURN TO PREVIOUS ENTRY PANEL !

RETURN TO BEGINNING OF WEB PAGE



: hum chem@aol.com



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80 Cumulative Years of Service to
Government and Industry.